

550, 655

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
4 November 2004 (04.11.2004)

PCT

(10) International Publication Number  
**WO 2004/094289 A1**

(51) International Patent Classification<sup>7</sup>: **B66B 11/08, 7/10**

(21) International Application Number:

PCT/US2003/012266

(22) International Filing Date: 22 April 2003 (22.04.2003)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): **OTIS ELEVATOR COMPANY** [US/US]; Ten Farm Springs Road, Farmington, CT 06032 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SIEWERT, Bryan Robert** [US/US]; 37 Overlook Drive, Westbrook, CT 06498 (US). **THOMPSON, Mark S.** [US/US]; 151 Old Kent Road North, Tolland, CT 06084 (US). **HOLLOWELL, Richard L.** [US/US]; 36 Richardson Drive, Hebron, CT 06248 (US).

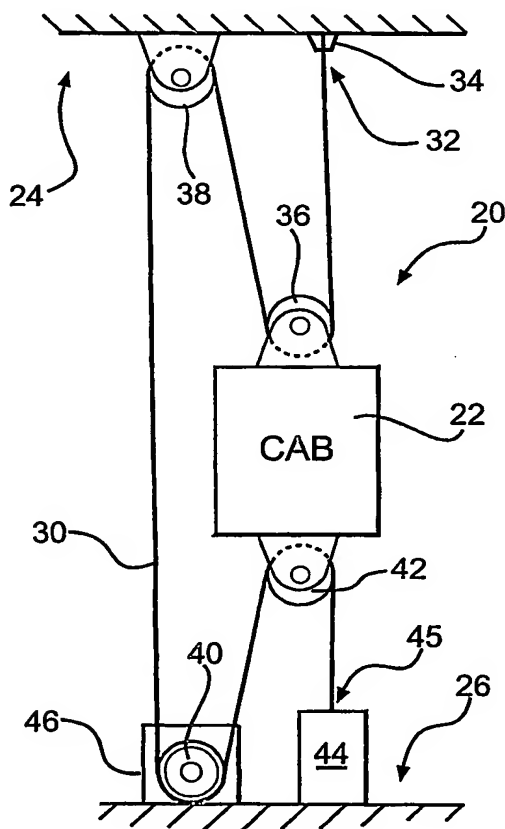
(74) Agent: **GASKEY, David J.**; Carlson, Gaskey & Olds, 400 W. Maple Rd., Ste. 350, Birmingham, MI 48009 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: ELEVATOR SYSTEM WITHOUT A MOVING COUNTERWEIGHT



(57) Abstract: An elevator system (20) includes a cab (22) supported for movement within a hoistway. A tension device (44) remains close to one end (26) of the hoistway. The tension device (44) maintains a desired tension on a load bearing member (30) that supports a weight of the cab (22) and moves to achieve a desired placement of the cab within the hoistway. The load bearing member (30) extends from the first end of the hoistway toward the cab, wraps at least partially around a first sheave (36) supported for movement with the cab, extends from the first sheave (36) toward the first end (24) of the hoistway, wraps at least partially around a second sheave (38) supported near the first end of the hoistway, extends from the second sheave toward a second end (26) of the hoistway, wraps at least partially about a third sheave (40) supported near the second end of the hoistway, extends toward the cab from the third sheave, wraps at least partially around a fourth sheave (42) supported for movement with the cab, and extends from the fourth sheave toward the second end of the hoistway where it is secured to the tension device (44).

WO 2004/094289 A1



**Declaration under Rule 4.17:**

— *of inventorship (Rule 4.17(iv)) for US only*

**Published:**

— *with international search report*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*